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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

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Additional inventors are being named on the _____ separately numbered sheets attached hereto

TITLE OF THE INVENTION (500 characters max)

METHOD FOR AUDIOVISUAL REMOTE COLLABORATION

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ENCLOSED APPLICATION PARTS (*check all that apply*)

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METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

[ ] Applicant claims small entity status. See 37 CFR 1.27.
[x] A check or money order is enclosed to cover the filing fees.
[x] The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 04-0100
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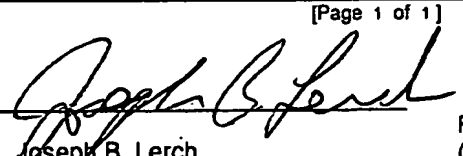
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

[x] No [ ] Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE 

Date October 21, 2003

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USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

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Provisional Application Transmittal Form;
Specification (24pp);
6 Sheets of Drawings (Figs. 1-6);

Check No. 3014 for $160; and

METHOD FOR AUDIOVISUAL REMOTE COLLABORATION

Field of the invention

The present invention relates generally to a method for collaborating remotely by visualizing, editing and annotating audiovisual and text content from various locations either simultaneously or consecutively. The invention provides a simple and cost effective means for creative developers (filmmakers, video makers, multimedia authors, advertising creatives, designers, animators, directors, FX supervisors, etc...) and even trainers to collaborate among themselves or with clients and/or trainees, even when they cannot be together. It even allows for asynchronous collaboration in those cases when the parties cannot work at the same time, as when they are in different time zones.

Background of the invention

Creative endeavors and the processes leading to them are being re-shaped by the constant advance of technology. Parties distributed around the world are now collaborating on projects that once were managed and developed from a centralized location. In addition to this, the advent of the Internet has resulted in an explosion of new creative outlets and formats, ranging from the purely artistic to the openly commercial and everything in between. These new modes of expression and communication sometimes require collaboration among parties who cannot meet in person, and telephone calls, faxes and even e-mails are sometimes not enough to convey adequate information to facilitate the joint work of these parties.

Examples of these are:

1. Postproduction and special FX houses working with remote clients: this practice is more and more common and until the present invention required high end systems linked by dedicated connections. A well-known occurrence of this was when Steven Spielberg had to supervise the special effects for "Jurassic Park 2: The Lost World" while shooting "Schindler's List" in Europe. The FX team was in California and had to provide daily samples of the work for the director to supervise and approve.

2. Advertising agencies working with clients and websites in remote locations: advertising work often requires multiple revisions, either generated by the client or in order to accommodate specifications of the publisher where the ad is poised to run. Prior to the current invention this entailed communications back and forth between the parties that demanded detailed descriptions and multiple versions.

3. Presentations, training materials and help desks: the state of business in this globalized world demands that organizations be able to train and help end-users and employees remotely, as well as showcase all kinds of audio visual and presentation materials to distant parties.

Summery of the Invention

The present invention solves the problems described above by enabling real-time visualization of content from multiple locations simultaneously and/or consecutively, and by covering such content with a transparent layer that can hold annotations linked to specific key points in the content, hence preserving its integrity.

A way to visualize this is to imagine a book with old-fashioned acetate transparencies covering each page. Each transparent sheet is associated with a given page and can hold annotations, drawings and edits. All without modifying the underlying text.

The present invention achieves similar results by wrapping digital content (video, audio, animations [vector based or otherwise], multimedia content, word processor documents, slide shows, etc...) in a transparent container. In addition to allowing annotations, this wrapper may enable real time visualization from remote locations.

In accordance with a preferred embodiment, users may interact with content and with one another in real time, by using a standard web browser to log onto a web page containing a workspace that holds both the content and the annotations. This web page can be accessed by multiple users simultaneously, either openly or after entering a password, and may allow for multiple administrators (users with full editorial control) or for a single administrator and a number of viewers (users without editorial control who can only see the material).

Users may then navigate through the content via a timeline and playback controls (also inside the workspace), going from key point to key point (or skipping) and making notes and drawing graphics associated with each of them. Key points can be frames, as can key frames in a movie or an animation, slides in a PowerPoint presentation, or pages in a text document. Annotations can be seen in real time by other logged in users or at a later time.

Brief description of the drawings

The foregoing brief description, as well as further objects, features, and advantages of the present invention will be understood more completely from the following detailed description of a presently preferred, but nonetheless illustrative, embodiment with reference being had to the accompanying drawings, in which:

Figure 1 is a block diagram illustrating the upload process;

Figure 2 is a block diagram illustrating the login and content selection processes;

Figure 3 is a block diagram illustrating the operation of the invention when displaying video content;

Figure 4 is a block diagram illustrating the operation of the invention when displaying HTML content;

Figure 5 is a block diagram illustrating the operation of the invention when displaying Flash content; and

Figure 6 is a screenshot of the preferred interface.

Detailed Description of the Preferred Embodiment

The present application describes a preferred embodiment of the invention that solves the problems described above. The currently preferred embodiment allows for users to interact with the content and with one another in real time, by using a standard web browser to log onto a web page containing a workspace that holds both the content and the annotations. This web page can be accessed by multiple users simultaneously, either openly or after entering a password, and may allow for multiple administrators (users with full editorial control) or for a single administrator and a number of viewers (users without editorial control who can only see the material).

Users may then navigate the content via a timeline and playback controls (also inside the workspace), going from key point to key point (or skipping) and making notes and drawing graphics associated with each of them. Key points can be frames or key frames in a movie or an animation, slides in a PowerPoint presentation, pages in a text document, etc...

Annotations can be seen in real time by other logged in users or at a later time. The timeline may indicate visually which key points include annotations, in order to simplify later reference.

In addition to the preferred and described embodiment, those skilled in the art will easily recognize other ways of achieving similar results in a non-concurrent fashion, allowing users to view the content individually and even offline; annotate and edit it; and then send it to other parties to view the annotations and edits; and even add some of their own. This sequential process can obviously support multiple rounds of revisions.

The presently preferred embodiment of the invention uses Macromedia Flash (currently in its MX version) to create the workspace with the navigational and editorial tools, encase the content and generate and read XML files describing the annotations. In addition to Flash, the preferred embodiment uses the Macromedia Flash Communications Server. The selected content is first covered with a wrapper that includes tools for navigating, editing and annotating the content, as well as a communication toolkit that connects with a server that enables multiple connections.

As should be clear to those skilled in the art, the wrapper and the server could be built using alternative technologies, like Java or Delphi.

Detailed description of the Preferred Embodiments

Figure 6 is a screenshot of the interface included for illustration purposes only, where block A indicates the content viewing area, block B indicates the navigational controls, block F indicates the annotation tools and block D indicates text and video chat tools. All features are included for descriptive purposes. Features can be added and removed.

Figure 1 is a functional block diagram of the object upload process; where the left blocks describe operations performed on the client side and the right blocks describe operations performed on the server side.

Operation begins at block #1 and continues on to #2, where the user selects a file to be uploaded. Block #3 determines whether the selected file is video, if the answer is yes the process continues on to #4 where the object is instanced, then on to #5 where the object is checked for size and appropriate extension, and then on to #6, where it is validated. If the object is valid, then the process continues on to # 7 on the server side, otherwise the process returns to block #2 where users may select other objects. At the server, objects are then checked for file type (#7), if the file type is FLV, then the process continues on to #30. If the file type is other than FLV, then it is converted into FLV at block #8 and then the process continues at block #30.

If the answer at #3 is negative, the process continues on to block #10; where it is determined whether the selected object is Flash. If the answer is positive, the process continues on to #11 where the Flash object is instanced and then on to #12, where Flash specific checks are performed. Block #13 ensures object validity, if the answer is positive, then the process continues on to #30, otherwise the process returns to block #2, where users may select other objects.

If the answer at #10 is negative, the process continues on to block #20; where it is determined whether the selected object is HTML. If the answer is positive, the process continues on to #21 where the HTML object is instanced and then on to #22, where HTML specific checks are performed. Block #23 ensures object validity, if the answer is positive, then the process continues on to #30; otherwise the process returns to block #2 where users may select other objects.

If the answer to #20 is negative, the process returns to block #2 where users may select other objects.

Otherwise all process continue on to #30 on the server side, where a new directory is created, then on to #31 where the uploaded object is saved in the new directory and on to #32, where the menu of available objects is updated.

The process ends at block #33.

Figure 2 is a functional block diagram of the operation of the log on process and the selection of the content and content type being viewed, where the left blocks describe operations performed on the server side and the right blocks describe operations performed on the client side.

Operation begins at block # 101, on the client side, with the client opening a standard browser window and requesting the Kratzer Home page. At block #102, the server receives the request and sends the HTML to the user, who inputs a user ID and password (block #103) in order to log on. At block #104, the server looks up the user in a registered user database and confirms validity of user in block #105. if the user is valid then process continues onto #106, otherwise it returns to #103 for new user and password input.

After validating the user, block #106 finds the content objects available for such user. If there are no objects available to such user, block #107 routes the process on to #108 and communicates so to the user; otherwise the process continues on to #109, where the user is presented with a list of available objects to choose from.

Once the user selects an object to work with (block #109), the selection is passed on to the server, which at block #110 determines whether the content to be seen is Flash based. If the answer is positive, then the process for viewing Flash based content is activated at block #111 and the current process finishes.

If the answer to #110 is negative, then the process continues on to #112, where the system determines whether the content to be seen is Video based. If the answer is positive, then the process for viewing video based content is activated at block # 113 and the current process finishes.

If the answer to #112 is negative, then the process continues on to #114, where the system determines whether the content to be seen is HTML based. If the answer is positive, then the process for viewing HTML based content is activated at block # 115 and the current process finishes.

Figure 3 is a Functional block diagram of the operation of the invention when displaying video content, where the left blocks describe operations performed on the server side and the right blocks describe operations performed on the client side.

Operation begins in block # 301, on the client side, with the request for an ASP file, using parameters determined in the process described in Figure 2.

Block # 303 depicts the server receiving the request from block #301 and splitting the process into two parallel and concurrent sub-processes: one at #305, where the server obtains all parameters needed to display the selected object. Simultaneously, HTML code including tags requesting an SWF file is delivered to the user and is executed at block #307. On execution on the

client side, such HTML tag requests the Flash based wrapper (SWF) file. At block #309 the server receives the request and delivers the SWF file.

Block #311 shows the client executing the SWF wrapper file using parameters obtained in the aforementioned parallel process that takes place at #305. Here the wrapper requests the Video object, as seen in # 313, and the associated XML file where the annotations will reside, # 315.

The process continues at #316, where the video object and XML File ar received, and the user views and annotates the content. On completion of work, block #320 provides a choice to save the annotations. If the answer is positive, the process moves to #322 where the updated XML file with the annotations is saved to the server and then to #324, where the process ends. Otherwise, the process ends at #324 without saving.

Figure 4 is a Functional block diagram of the operation of the invention when displaying HTML content, where the left blocks describe operations performed on the server side and the right blocks describe operations performed on the client side.

Operation begins at block # 401, on the client side, with the request for an ASP file, using parameters determined in the process described in Figure 2.

Block # 403 depicts the server receiving the request from #401 and splitting the process into two parallel and concurrent sub-processes: one at #405, where the server obtains all parameters needed to display the selected object. Simultaneously, HTML code including tags requesting an SWF file is delivered to the user and executed at block #407. On execution on the client side, such HTML tag requests the Flash based wrapper (SWF) file. At block #409 the server receives the request and delivers the SWF file.

Block #411 shows the client executing the SWF wrapper using parameters obtained in the aforementioned parallel process that takes place at #405. Here the wrapper requests the HTML object, as seen in # 413, and the associated XML file where the annotations will reside, # 415.

The process continues at #416, where HTML object and XML file are received, and the user views and annotates the content. On completion of work, block #420 offers the choice to save the annotations. If the answer is positive, the process moves to #422 where the updated XML file with the annotations is saved to the server and then to #424, where the process ends. Otherwise, the process ends at #424 without saving.

Figure 5 is a Functional block diagram of the operation of the invention when displaying Flash content, where the left blocks describe operations performed on the server side and the right blocks describe operations performed on the client side.

Operation begins at block # 501, on the client side, with the request for an ASP file, using parameters determined in the process described in Figure 2.

Block # 503 depicts the server receiving the request from #501 and splitting the process into two parallel and concurrent sub-processes: one at #505, where the server obtains all parameters needed to display the selected object. Simultaneously, HTML code including tags requesting an SWF file is delivered to the user and executed at block #507. On execution on the client side, such HTML tag requests the Flash based wrapper (SWF) file. At block #509 the server receives the request and delivers the SWF file.

Block #511 shows the client executing the SWF wrapper using parameters obtained in the aforementioned parallel process that takes place at #505. Here the wrapper requests the Flash object, as seen in # 513, and the associated XML file where the annotations will reside in # 515.

The process continues at #516, where the object and XML file are received and user views and annotates the content. On completion of work, block #520 offers the choice to save the annotations. If the answer is positive, process moves to #522 where the updated XML file with the annotations is saved to the server and then on to #524, where the process ends. Otherwise, the process ends at #524 without saving.

Alternate embodiment of the present invention

Alternatively, for those cases when real time collaboration is not possible or not necessary, a Flash wrapper similar to the one in the preferred embodiment, with or even without the communications capabilities can be used sequentially.

The way in which this embodiment functions is as follows: the content is first inserted onto the wrapper and compiled into a self contained SWF file. The resulting file includes the content and the navigation, editing and annotation tools (similar to the preferred embodiment). Once the compiled file is ready it can be distributed electronically in a number of ways (via Web, email, disk, network, etc...) for others to view and work on. The process can be iterative, allowing for multiple rounds of revisions.

Preferred code for the disclosed process is attached as Appendix A.

Although a preferred embodiment of the invention has been disclosed for illustrative purposes, those skilled in the art will appreciate that many additions, modifications, or substitutions are possible without departing from the scope and spirit of the invention.

METHOD FOR AUDIOVISUAL REMOTE COLLABORATION

Abstract Of The Disclosure

The present invention provides a method for real-time visualization of content from multiple locations simultaneously and/or consecutively, and by covering such content with a transparent layer that can hold annotations linked to specific key points in the content, hence preserving its integrity. This is similar to a book with acetate transparencies covering each page. Each transparent sheet is associated with a given page and can hold annotations, drawings and edits, all without modifying the underlying text. The present invention achieves similar results by wrapping digital content in a transparent container. In addition to allowing annotations, this wrapper may enable real time visualization from remote locations. In accordance with a preferred embodiment, users may interact with content and with one another in real time, by using a standard web browser to log onto a web page containing a workspace that holds both the content and the annotations.

Figure 1: Functional Diagram of object upload process.

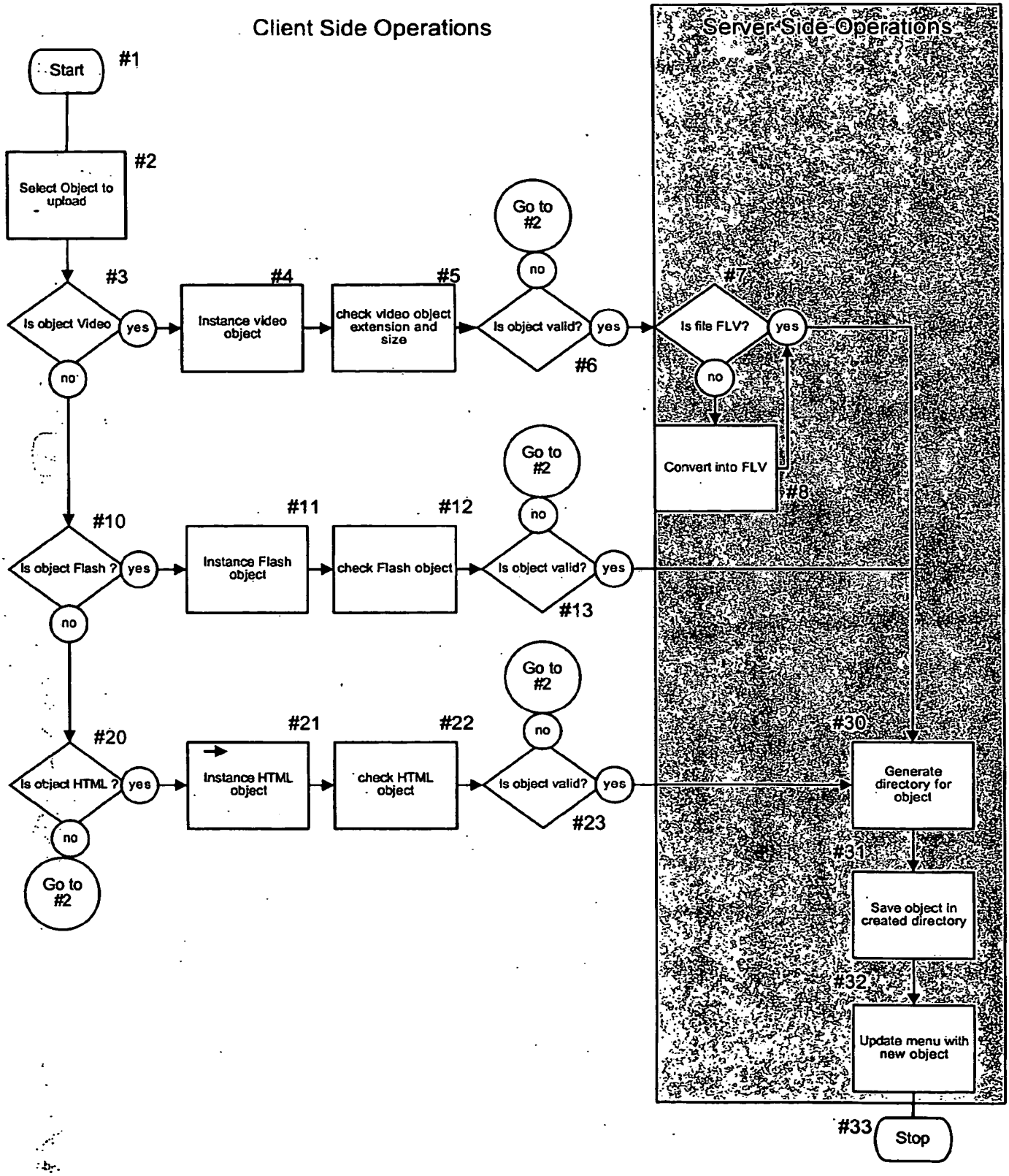


Figure 2: Functional Diagram of User validation and object selection processes.

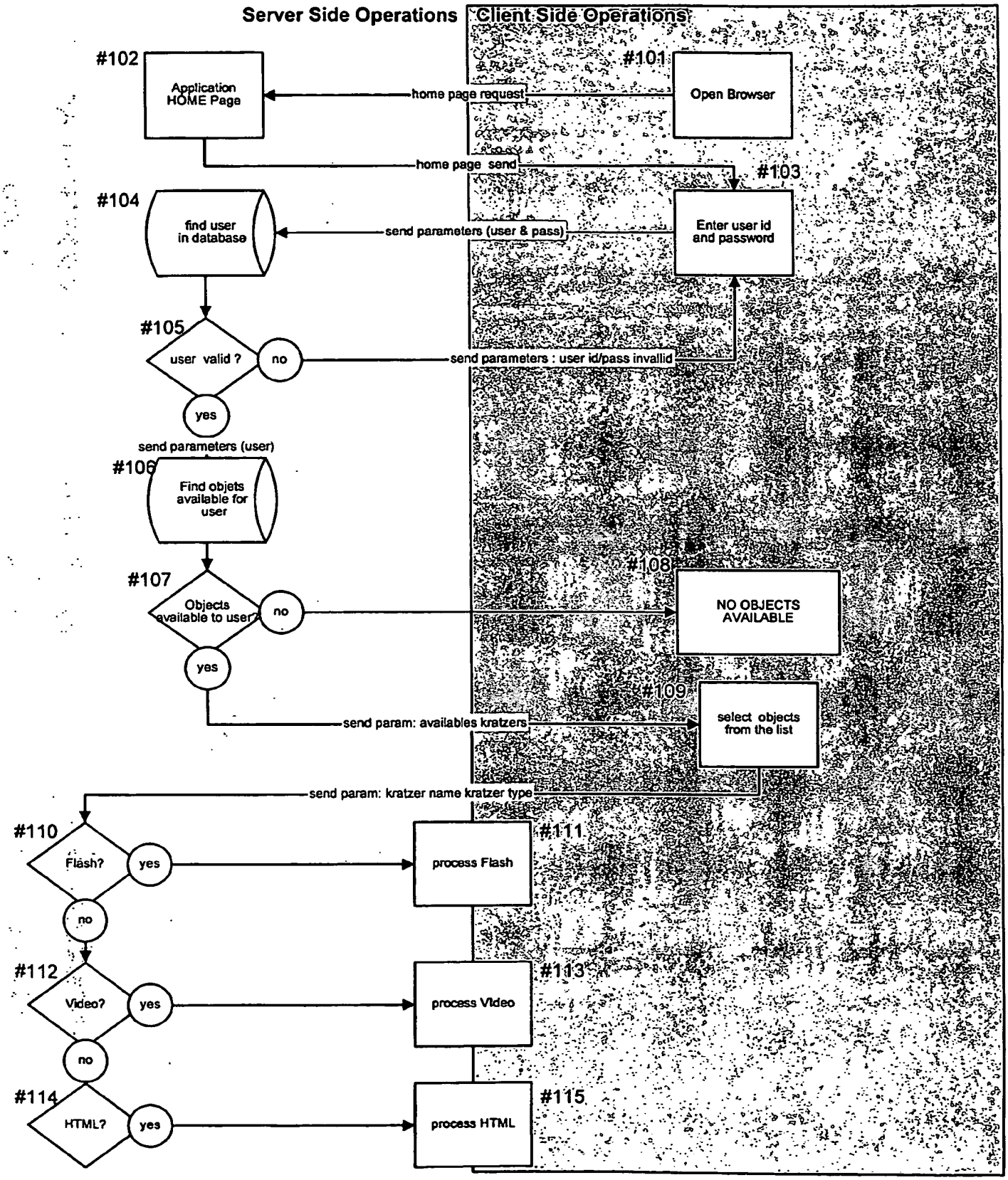


Figure 3: Functional Diagram of Operation of Video Module

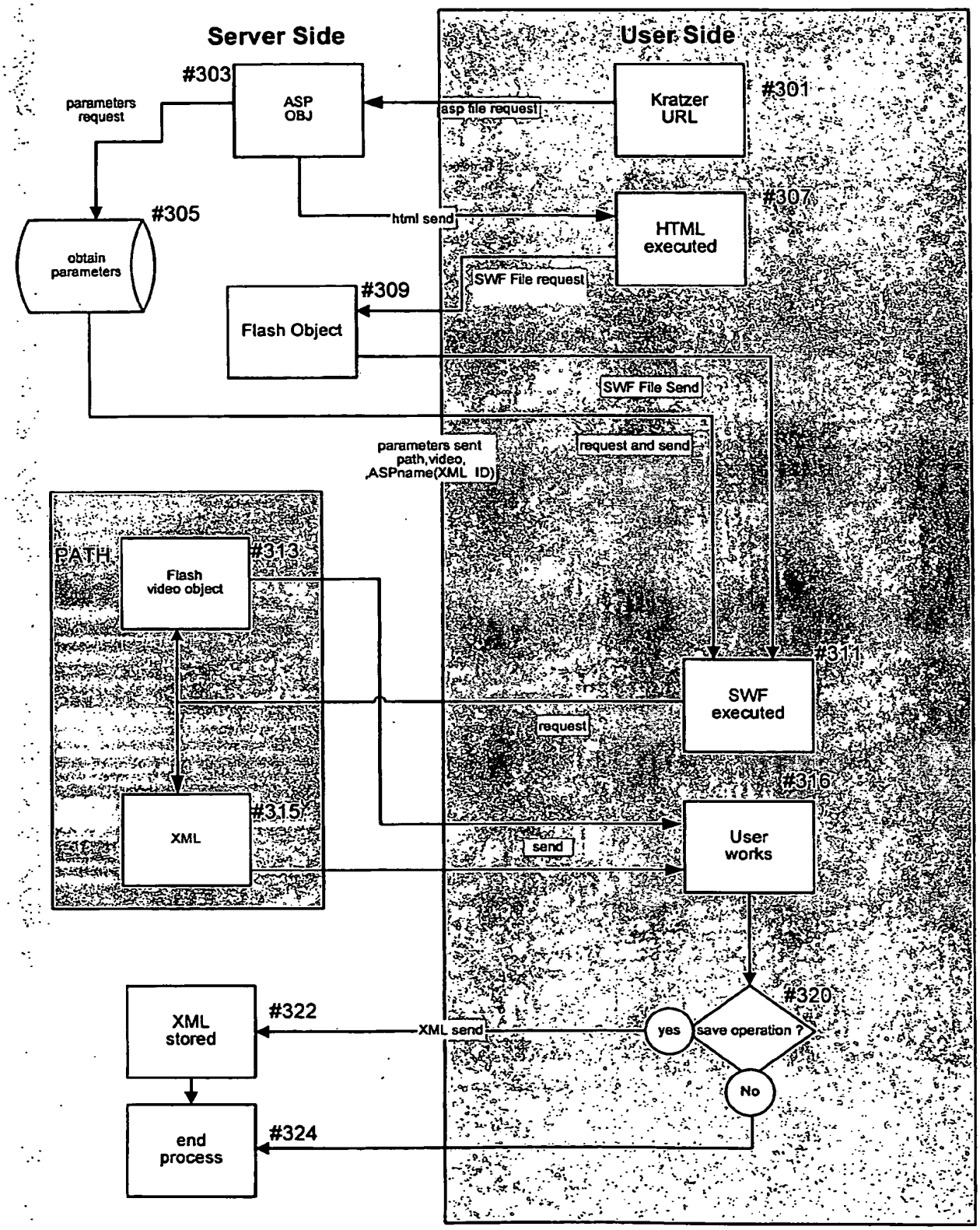


Figure 4: Functional Diagram of Operation of HTML Module

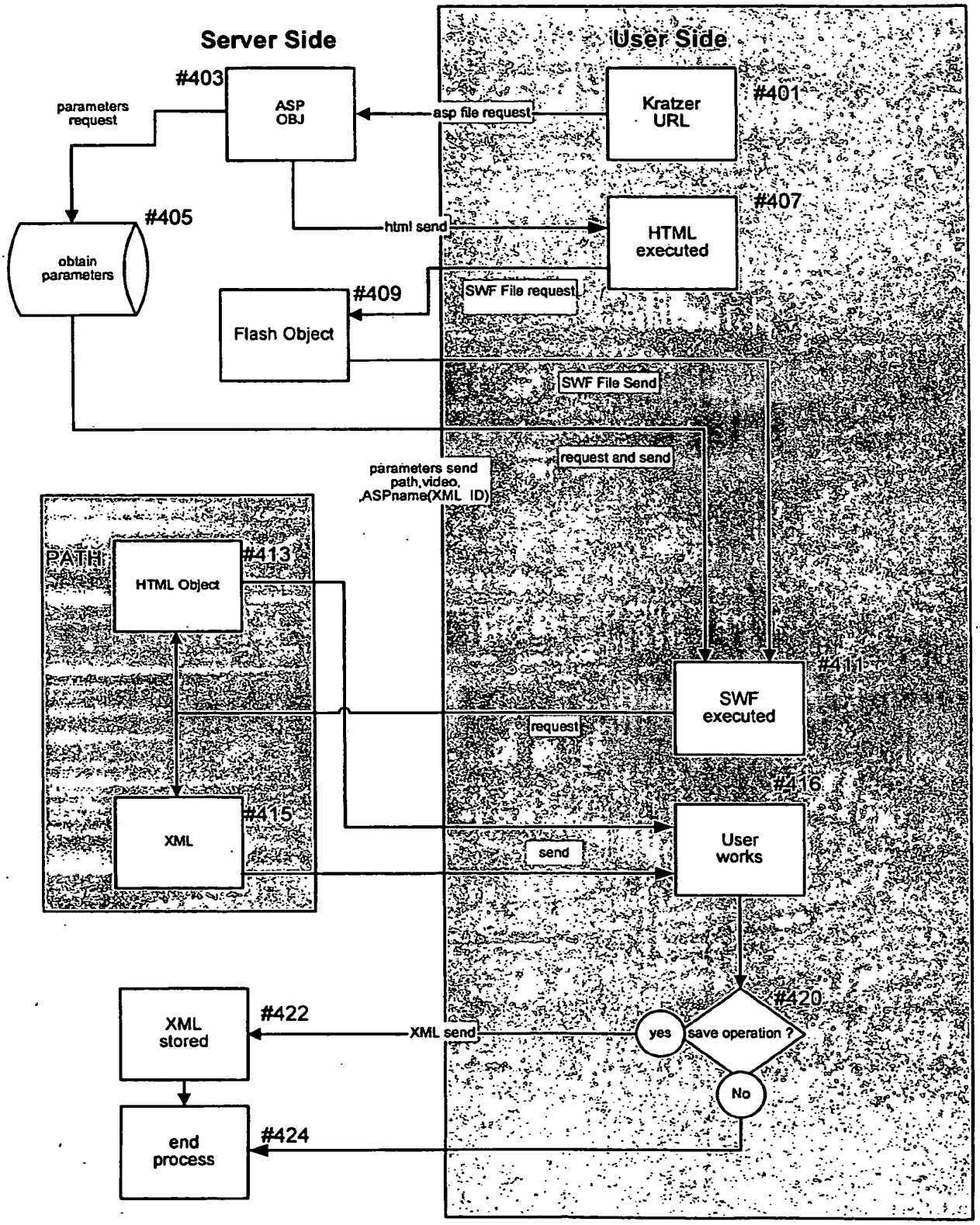


Figure 5: Functional Diagram of Operation of Flash Module

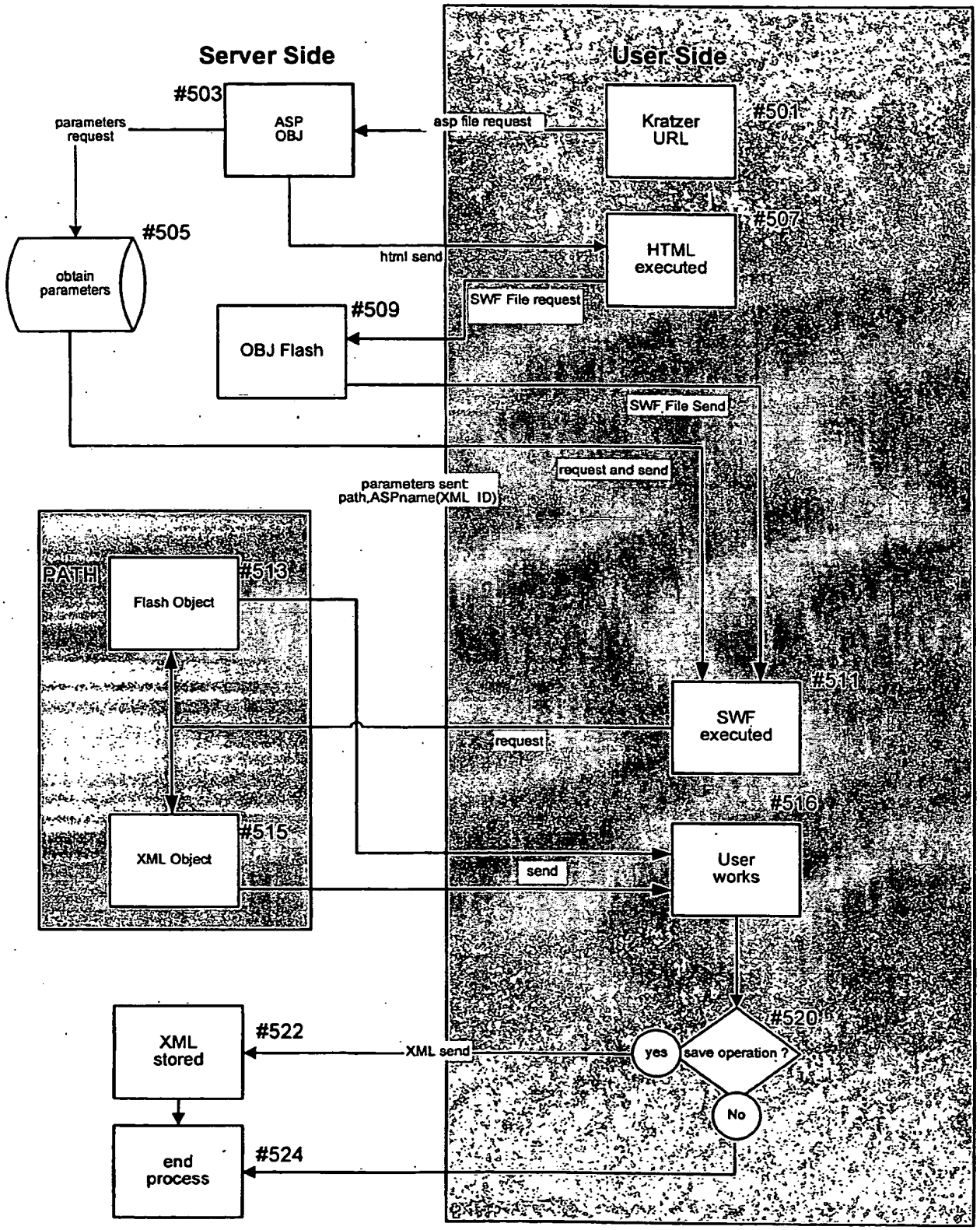
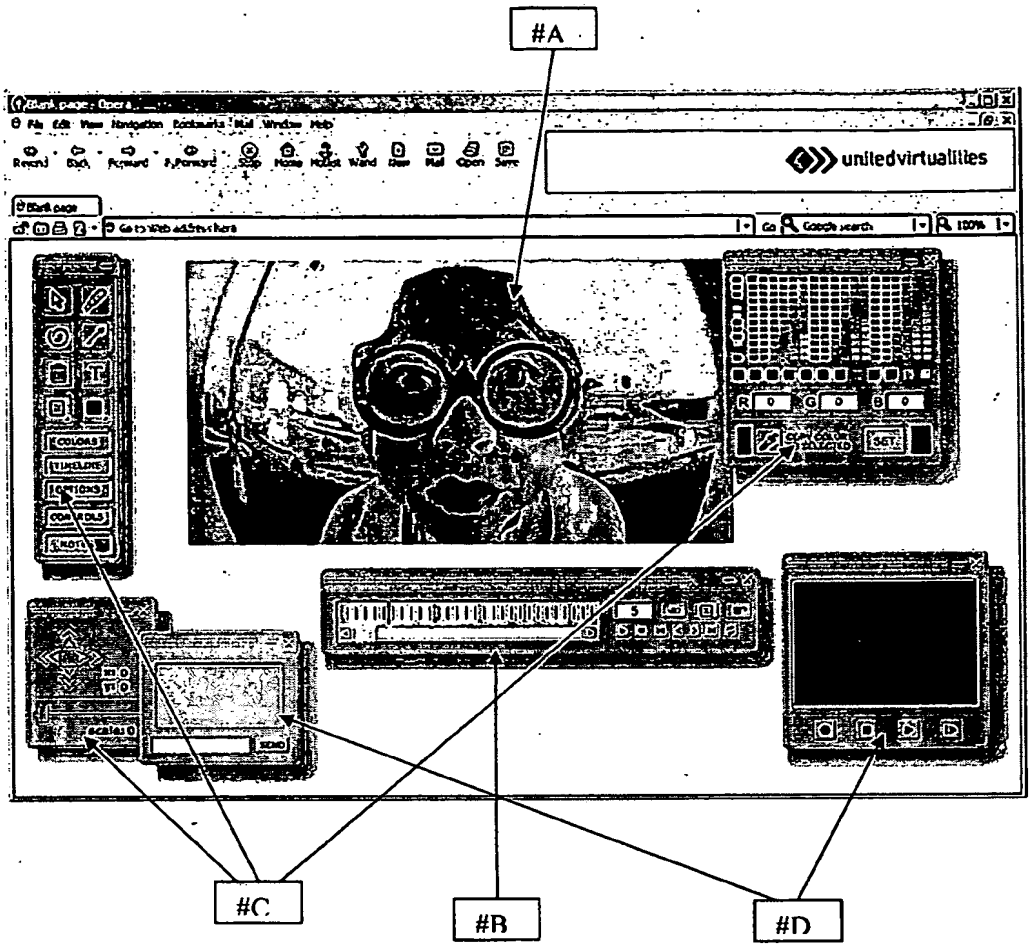


Figure 6 – Scr enshot of the Interface



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